In the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (cancelled)

Claim 2 (currently amended): A method of compiling a library of expression~~molecular~~ profiles correlated with a known toxic property of a chemical compositions ~~having predetermined toxicities~~, comprising the steps of:

a) contacting an isolated mammalian embryoid body with a chemical composition ~~having predetermined toxicities~~;

b) detecting and recording alterations in genomic expression ~~of sets of genes or proteins~~ in the mammalian embryoid body in response to the chemical composition compared to genomic expression ~~of sets of genes or proteins~~ in ~~an~~ mammalian embryoid body not contacted with the chemical composition, to create a pattern of alterations in genomic expression~~gene expression or protein expression~~ in the mammalian embryoid body in response to the chemical composition, wherein the pattern is correlated with a known toxic property of the chemical composition; and

c) compiling a library of expression~~molecular~~ profiles correlated with the known toxic property of the test chemical by repeating steps a) and b) with at least two chemical compositions ~~having predetermined toxicities~~.

Claim 3 (currently amended): The method of claim 2, wherein the alterations in genomic expression~~gene expression or protein expression~~ are detected by a label.

Claim 4 (original): The method of claim 3, wherein the label is selected from the group consisting of fluorescent, colorimetric, radioactive, enzyme, enzyme substrate, nucleoside analog, magnetic, glass, latex bead, colloidal gold, and electronic transponder.

Claim 5 (currently amended): The method of claim 2, wherein the genomic expression~~molecular profile~~ comprises alterations in gene expression.

Claim 6 (original):The method of claim 5, wherein the alterations in gene expression are detected by a nucleotide hybridization assay.

Claim 7 (currently amended): The method of claim 2, wherein the genomic expression~~molecular profile~~ comprises alterations in protein expression.

Claim 8 (previously presented): The method of claim 7, wherein the alterations in protein expression are detected by an immunodetection assay.

Claim 9 (original): The method of claim 7, wherein the alterations in protein expression are detected by a mass spectrometry assay.

Claim 10 (currently amended): The method of claim 2, wherein the isolated mammalian embryoid body~~ies are~~ is of human.

Claim 11 (currently amended): The method of claim 10, further wherein the chemical compositions ~~having predetermined toxicities~~ are selected from the group consisting of therapeutic agents, neurotoxins, renal toxins, hepatic toxins, toxins of hematopoietic cells, and myotoxins.

Claim 12 (currently amended): The method of claim 10, further wherein the chemical compositions ~~having predetermined toxicities~~ are selected from the group consisting of agents that are toxic to cells of one or more reproductive organs, teratogenic agents and carcinogens.

Claim 13 (currently amended): The method of claim 10, further wherein the chemical compositions ~~having predetermined toxicities~~ are selected from the group consisting of agricultural chemicals, cosmetics, and environmental contaminants.

Claim 14 (currently amended): The method of claim 2, wherein the isolated mammalian embryoid body~~ies are~~is of non-human mammal~~s~~.

Claim 15 (currently amended): The method of claim 14, wherein the non-human mammal~~s are~~is rodent~~s~~.

Claim 16 (currently amended): The method of claim 14, further wherein the chemical compositions ~~having predetermined toxicities~~ are selected from the group consisting of animal therapeutics, neurotoxins, renal toxins, hepatic toxins, toxins of hematopoietic cells, and myotoxins.

Claim 17 (currently amended): The method of claim 14, further wherein the chemical compositions ~~having predetermined toxicities~~ are selected from the group consisting of agents that are toxic to cells of one or more reproductive organs, teratogenic agents and carcinogens.

Claim 18 (currently amended): The method of claim 14, further wherein the chemical compositions ~~having predetermined toxicities~~ are selected from the group consisting of agricultural chemicals, cosmetics, and environmental contaminants.

Claim 19 (withdrawn): A library of molecular profiles of chemical compositions having predetermined toxicities, produced by a method according to any one of the claims 2, 10-18.

Claim 20 (withdrawn): The library of claim 19, wherein the library comprises molecular profiles for at least 20 chemical compositions.

Claims 21-33 (canceled)

Claim 34 (withdrawn): An integrated system for comparing the molecular profile of a chemical composition to a library of molecular profiles of chemical compositions having predetermined toxicities, comprising: an array reader adapted to read the pattern of labels on an array, operably linked to a digital computer comprising a database file having a plurality of molecular profiles of chemical compositions having predetermined toxicities.

Claim 35 (withdrawn): The integrated system of claim 34, wherein the data file comprises at least 20 gene or protein expression profiles.

Claim 36 (withdrawn): The integrated system of claim 34, capable of reading the hybridization pattern of 500 or more labels on an array per hour.

Claim 37 (withdrawn): The integrated system of claim 34, further operably linked to an optical detector for reading the pattern of labels on an array.

Claim 38 (withdrawn): An integrated system for correlating the molecular profile and toxicity for a chemical composition comprising: an array reader adapted to read the pattern of labels on an array, operably linked to a digital computer comprising a database file having a plurality of molecular profiles of chemical compositions with predetermined toxicities and a program suitable for molecular profile-toxicity correlation.

Claim 39 (withdrawn): The integrated system of claim 38, wherein the data file comprises at least 20 gene or protein expression profiles.

Claim 40 (withdrawn): The integrated system of claim 38, capable of reading the hybridization pattern of 500 or more labels on an array per hour.

Claim 41 (withdrawn): The integrated system of claim 38, further operably linked to an optical detector for reading the pattern of labels on an array.

Claim 42 (new): A method of typing toxicity of a test chemical composition, the method comprising: comparing an expression profile of the test chemical composition with an expression profile of a chemical composition, wherein the expression profile of the chemical composition is correlated with a known toxic property of the chemical composition; wherein the type of toxicity of the test chemical composition is determined by the comparison; and wherein the expression profile of the test chemical composition is created by a method comprising the steps of:

a) contacting a mammalian embryoid body with the test chemical composition; and

b) detecting and recording alterations in genomic expression in the mammalian embryoid body in response to the test chemical composition compared to genomic expression in a mammalian embryoid body not contacted with the test chemical composition, to create a pattern of alterations in genomic expression in the mammalian embryoid body in response to the test chemical composition.

Claim 43 (new): A systematic method of typing toxicity of a test chemical composition, the method comprising: comparing an expression profile of the test chemical composition with a library of expression profiles of chemical compositions, wherein the type of toxicity of the test chemical composition is determined by the comparison; wherein the library is prepared according to the method of claim 2, wherein the library comprises the expression profiles of at least two chemical compositions, wherein the expression profiles of the chemical compositions are correlated with a known toxic property of the chemical compositions; and wherein the expression profile of the test chemical composition is created by a method comprising the steps of:

a) contacting a mammalian embryoid body with the test chemical composition; and

b) detecting and recording alterations in genomic expression in the mammalian embryoid body in response to the test chemical composition compared to genomic expression in a mammalian embryoid body not contacted with the test chemical composition, to create a pattern of alterations in genomic expression in the mammalian embryoid body in response to the chemical composition.

Claim 44 (new): A method of ranking toxicity of a test chemical composition, the method comprising: comparing an expression profile of the test chemical composition with an expression profile of a chemical composition, wherein the expression profile of the chemical composition is correlated with a known toxic property of the chemical composition; wherein the rank of toxicity of the test chemical composition is determined by the comparison; and wherein the expression profile of the test chemical composition is created by a method comprising the steps of:

a) contacting a mammalian embryoid body with the test chemical composition; and

b) detecting and recording alterations in genomic expression in the mammalian embryoid body in response to the test chemical composition compared to genomic expression in a mammalian

embryoid body not contacted with the test chemical composition, to create a pattern of alterations in genomic expression in the mammalian embryoid body in response to the test chemical composition.

Claim 45 (new): A method of ranking toxicity of a test chemical composition, the method comprising: comparing an expression profile of the test chemical composition with a library of expression profiles of chemical compositions, wherein the rank of toxicity of the test chemical composition is determined by the comparison; wherein the library is prepared according to the method of claim 2, wherein the library comprises the expression profiles of at least two chemical compositions, wherein the expression profiles of the chemical compositions are correlated with a known toxic property of the chemical compositions; and wherein the expression profile of the test chemical composition is created by a method comprising the steps of:

a) contacting a mammalian embryoid body with the test chemical composition; and

b) detecting and recording alterations in genomic expression in the mammalian embryoid body in response to the test chemical composition compared to genomic expression in a mammalian embryoid body not contacted with the test chemical composition, to create a pattern of alterations in genomic expression in the mammalian embryoid body in response to the test chemical composition.

Claim 46 (new): A method of assessing toxicity of a test chemical, the method comprising: assessing toxicity of the test chemical based on comparing a expression profile of the test chemical composition with a library of expression profiles of chemical compositions, wherein the rank or type of toxicity of the test chemical composition is determined by the comparison; wherein the library is prepared according to the method of claim 2, wherein the library comprises the expression profiles of at least two chemical compositions, wherein the expression profiles of the chemical compositions are correlated with a known toxic property of the chemical compositions; and wherein the expression profile of the test chemical composition is created by a method comprising the steps of:

a) contacting a mammalian embryoid body with the test chemical composition; and

b) detecting and recording alterations in genomic expression in the mammalian embryoid body in response to the test chemical composition compared to genomic expression in a mammalian

embryoid body not contacted with the test chemical composition, to create a pattern of alterations in genomic expression in the mammalian embryoid body in response to the test chemical composition.

Claim 47 (new): A method for prioritizing drug development of a test chemical, the method comprising: prioritizing drug development of the test chemical based on comparing a expression profile of the test chemical composition with a library of expression profiles of chemical compositions, wherein the rank or type of toxicity of the test chemical composition is determined by the comparison; wherein the library is prepared according to the method of claim 2, wherein the library comprises the expression profiles of at least two chemical compositions, wherein the expression profiles of the chemical compositions are correlated with a known toxic property of the chemical compositions; and wherein the expression profile of the test chemical composition is created by a method comprising the steps of:

a) contacting a mammalian embryoid body with the test chemical composition; and

b) detecting and recording alterations in genomic expression in the mammalian embryoid body in response to the test chemical composition compared to genomic expression in a mammalian embryoid body not contacted with the test chemical composition, to create a pattern of alterations in genomic expression in the mammalian embryoid body in response to the test chemical composition.

Claim 48 (new): The method of claim 42, 43, 44, 45, 46, or 47, wherein the test chemical composition is known or unknown.

Claim 49 (new): The method of claim 42, 43, 44, 45, 46, or 47, further wherein the mammalian embryoid body is of human.

Claim 50 (new): The method of claim 48, further wherein the chemical compositions are selected from the group consisting of therapeutic agents, neurotoxins, renal toxins, hepatic toxins, toxins of hematopoietic cells, or myotoxins.

Claim 50 (new): The method of claim 48, further wherein the chemical compositions are selected from the group consisting of agents that are toxic to cells of one or more reproductive organs, teratogenic agents and carcinogens.

Claim 51 (new): The method of claim 48, further wherein the chemical compositions are selected from the group consisting of agricultural chemicals, cosmetics, and environmental contaminants.

Claim 52 (new): The method of claim 42, 43, 44, 45, 46, or 47, further wherein the mammalian embryoid body is of non-human mammal.

Claim 53 (new): The method of claim 52, wherein the non-human mammal is rodent.

Claim 54 (new): The method of claim 53, further wherein the chemical compositions are selected from the group consisting of animal therapeutics, neurotoxins, renal toxins, hepatic toxins, toxins of hematopoietic cells, and myotoxins.

Claim 55 (new): The method of claim 52, further wherein the chemical compositions are selected from the group consisting of agents that are toxic to cells of one or more reproductive organs, teratogenic agents and carcinogens.

Claim 56 (new): The method of claim 52, further wherein the chemical compositions are selected from the group consisting of agricultural chemicals, cosmetics, and environmental contaminants.